Making Informed Decisions
Understanding Digital Education Leadership

Module 5
Making Informed Decisions
The Commonwealth Digital Education Leadership Training in Action (C-DELTA) is a programme designed to promote digital education environment in Commonwealth nations. It will engage with governments, educational institutions, teachers, and civil society organisations to assess digital education competencies and provide training opportunities for teachers and students to help them build digital education skills for lifelong learning. It will develop leaders who can demonstrate how to use ICTs effectively and influence others around them to use digital technology appropriately and effectively for learning (and earning) and support sustainable development.

This module is has been developed by the University of Cape Town (UCT) with support from the Commonwealth of Learning (COL). COL is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies. UCT is South Africa’s oldest university, and is one of Africa’s leading teaching and research institutions.

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**About the Digital Education Leadership Curriculum**

The Commonwealth Digital Education Leadership Training in Action (C-DELTA) project is a programme of the Commonwealth of Learning (COL) that intends to promote digital education in the Commonwealth nations. In order to develop Digital Education Leaders (DEL), these modules have been produced by the Centre for Innovation in Learning and Teaching (CILT) at the University of Cape Town (UCT) in collaboration with COL. The Conceptual framework underpinning these modules has been published - see http://oasis.col.org/handle/11599/2442. However, some aspects from the Concept Document are foregrounded here to assist you in understanding how the modules are planned and work together.

A curriculum for digital education leadership requires two components: digital education and leadership in digital education, with digital literacies as the basis for both. The two components for the curriculum framework have been developed on the assumption that before an individual becomes a digital education leader, that individual must first demonstrate capability in the practices identified with digital education. In other words, the assumption is that a leader should be able to walk their talk and can only lead if they have the necessary knowledge in the "stuff" to be led. Hence, two linked frameworks have been developed: one addressing digital education and one addressing leadership in digital education.

**Overview**

The module overview gives you a general introduction to the module. We strongly recommend that you read the overview carefully before starting your study.

**Is modules of C-DELTA suitable for me?**

Digital education leadership is more than a set of digital abilities or skills; it is a method and set of processes for doing and thinking about digital education. In these modules, we seek to develop you as a Digital education leader through fostering your digital literacy, in order to develop your influence of others through your creative pursuits and innovations in the effective use of ICT for teaching and learning. This view goes beyond skills and competencies, although digital education leaders need to be fluent in the use of ICT for learning and teaching. As a digital education leader, you must be able to translate literacy to leadership through questioning the status quo, providing direction and exercising influence.

We assume that leadership is an attribute of an individual and is not related to any position or roles they may have. Digital education leadership, from this perspective, will involve different players at different levels. However, this initiative envisages primarily three sets of learners: students, teachers, and policy makers.

The modules contain a number of multiple choice questions (MCQs) that will give you a sense of what concepts you are familiar with and which are new to you. Depending on your prior knowledge, you may choose to use these MCQs to construct a personal learning path through the curriculum. However, given that the activities within the modules are aimed at helping you develop capabilities and skills in digital education leadership, we recommend that even if you are familiar with the content, you engage in the activities.

The depth and the way you engage with the curriculum is likely to differ depending on your context and prior experience. We anticipate that these modules may be suitable for individuals to undertake as a self-study resource.
In addition, Governments, educational institutions and civil society organisations across Commonwealth countries and beyond may also like to use the framework, curriculum, courses and assessment tool developed in this project for workshops and group training. As the resources are published under a Creative Commons license, you are free to adapt them for your contexts under the license agreement. Many of the activities can be adapted to be done in a group and by working through the MCQs. It is also possible (at an organisational level) for the curriculum to be contextualised and customised for a group process.

How Part 1 is structured

Digital education has been defined here as the process of fostering people's ability to live, learn and work in an evolving digitally mediated society by (i) developing digital identities, (ii) mobilising resources and (iii) engaging with networks.

Part 1 (Modules 1-3) of the curriculum are structured around these three interrelated themes.

Developing digital identities refers to working with the digital tools and networks to which you have access in your contexts in order to enable you to create and manage your own online presences and footprints, and to exercise control over your expression of this digital identity (or identities). By implication, this involves negotiating pathways within contexts.

Mobilising resources refers to the processes of finding out which resources are available to you in your context, which skills you need in order to acquire the necessary capabilities to draw on these resources, the development of understanding of how these resources are used in practice in your particular contexts, and the development of capabilities to evaluate, combine and create new resources.

Engaging with networks refers to interacting with networks in a manner that is meaningful and purposeful. This entails constructively sharing information, knowledge and resources. In the online space, this can entail building on your understanding of the social media ecosystem to enable choices regarding where and how you can create online profiles, interact with people across different networks and build of personal learning networks.

How Part 2 is structured

Part 2 of the curriculum comprises modules 4-7. It focuses on developing you as a Digital Education leader in order to work together with individuals, institutions, communities and networks to foster people's ability to live, learn and work in an evolving digitally mediated society by:

1. enhancing access — i.e., environmental considerations;
2. making informed decisions appropriate to context — i.e., to choose from options in a given context and implement digital education;
3. developing capacity in individuals, curricula and organisations — i.e., operational dimensions; and
4. cultivating innovation — i.e. to reflect being a leader, foster collaboration and networks to accelerate innovation.

The module content

Each dimension comprises:

- An introduction to the unit content.
- Unit outcomes
- New terminology.
- Core content of the unit
- A variety of learning activities
- A unit summary.
- MCQ assessments, as applicable

**Resources**

For those interested in learning more on this subject, we provide you with a list of additional resources throughout the modules; these are usually online resources with further links to a range of multimodal resources. We are cognisant of different contexts and the variation in access to the internet and so have tried to provide a range of resources. The curriculum aims to acknowledge histories, bodies of knowledge and thought leaders from a range of Commonwealth countries and is designed to be sensitive to participants’ contexts and experiences. However, we are few people and would welcome your suggestions and input in terms of resources and examples. The curriculum is CC BY-SA which enables you to adapt and modify the content and we hope that if you do so you will contribute your suggestions back to us.

**Your comments**

After completing these modules, we would appreciate it if you would take a few moments to give us your feedback on any aspect of this module. Your feedback might include comments on:

- content and structure.
- reading materials and resources (including videos).
- activities.
- assessments.
- duration.

Your constructive feedback will help us to improve and enhance this module.

**Study skills**

As an adult learner, your approach to learning will be different to that from your school days: you will choose what you want to study, you will have professional and/or personal motivation for doing so, and you will most likely be fitting your study activities around other professional or domestic responsibilities. Essentially, you will be taking control of your learning environment. As a consequence, you will need to consider performance issues related to time management, goal setting, stress management, etc. Perhaps you will also need to reacquaint yourself in areas such as essay planning, coping with exams, and using the web as a learning resource. Your most significant considerations will be time and space, i.e. the time you dedicate to your learning and the environment in which you engage in that learning. We recommend that you take time now—before starting your self-study—to familiarize yourself with these issues. There are a number of excellent resources on the web.

**Timeframe**

As described above, as an adult learner, you will make choices about how deeply you want to engage with the module. This will depend on your prior experiences and context. The modules range between 30 and 60 pages and include 3-6 activities which require further exploration, reflection, engagement, and exploration from you. We estimate if you engage fully with the modules it will take you 16-20 hours.

**Assessments**
Each module also has a number of multiple choice quizzes. This will give you a sense of how well you have understood the concepts and content contained in each module. However, it won’t give you the experience and skills you need in order to become a Digital Education Leader. The activities provided in the modules are for self-directed learning and development. Through engaging in these activities, you will develop your own digital practices which will provide the basis for your development as a Digital Education Leader.

**Margin icons**

While working through these modules you will notice the frequent use of margin icons. These icons serve to "signpost" a particular piece of text, a new task or change in activity. A complete icon set is shown below. We suggest that you familiarize yourself with the icons and their meaning before starting your study.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Activity</th>
<th>Assessment</th>
<th>Outcomes</th>
<th>Terminology</th>
<th>Summary</th>
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Unit 1: Digital - wonders, dividends and divides

Introduction
Whatever your professional background or current role, you will be called on, at some time, to make important and costly decisions about Information and Communication Technologies (ICT).

To make informed decisions about education in the 21st century, you will need to unpack the digital stories being told and problematise these future scenarios.

No matter where you are in your leadership journey, this module will assist you to become a better steward of your digital responsibilities, equipped with approaches, techniques and frameworks that will allow you to make informed digital decisions.

Upon completion of this unit you will be able to:

- Recognize the range of different stories leaders tell about their digital journey and case for change that they made.
- Identify the various factors and sources that influence these digital stories
- Demonstrate awareness of the emerging digital territory and look for signs and signals that might affect your institution in the future.
- Distinguish between the different assumptions that others hold about technologies role in driving change
- Reflect on your own experience with education and technology

Some stories about the digital - wonders, dividends and divides

Perhaps you are taking this course because you have your own digital story. You have identified the need for change and have started to consider the implications of incorporating digital into your future. If you want to be able to take informed decisions about education in the 21st century, then take the time to listen critically to the various stories that are being told about upcoming educational futures. These stories can help you add detail, understanding, and options to your own story, and assist you with making plans for change.

Digital wonders

Digital wonders have brought the world to the fingertips of certain, often younger, people. Born into a connected world and comfortable with a “onlife” or a hyper-connected reality. Enrolled in a “wired” school, college or university, they have been given the means to consume, share, re-use and create information in ways that are unimaginable a generation ago. These “digital residents” do not make a distinction between education and technology, but see the internet as a basic necessity, where unrestricted access to data, information and knowledge is considered as normal. Searching, watching, downloading and consuming information is only a part of their ethos. They’ve moved beyond access, are participants in different communities of practice, who use a variety of digital resources for active and self-directed inquiry. These activated (and well supported users) are comfortable moving beyond their own contexts, part of different subcultures, able to use or hack social, interactive and online systems to achieve novel and clever outcomes.
**Digital dividends**

Digital dividends are growing as the number of internet users triple in a decade. From 1 billion in 2006 to 3.2 billion in 2015, more teachers, students, parents, employers are more connected than ever before. The use of ICT in these developing countries has been the subject of much interest. Many proponents speculate about the “leapfrog effect” arguing that ICT will improve educational quality, increase economic competitiveness and facilitate inclusion. Thus far, the “digital dividends” - the broader development benefits expected from these technologies has fallen short of many expectations. The reality is that early reading materials are unavailable for the majority of children and low literacy rates are still an urgent social issue in developing countries and regions. Budgets for digital infrastructure are high, but other developmental challenges (literacy, girl children in school, nutrition etc.) are still not addressed. Even when public sector investments are made for ICT, they seem to only increase the gap between richer and poorer. While there are many individual success stories about digital education in developing contexts, digital technologies have not had an impact on levelling an uneven playing field. So the situation is then, that in the developing world, the expected digital dividends, have not materialized as expected. Digital has concentrated benefits for a few and contributed towards a more polarized over all society.

**Digital divides**

Digital divides suggest that there is overwhelming evidence that as ICT becomes woven into the fabric of everyday life then the divisions in ICT use are strengthening rather than diminishing. Certain youth, in both the global north and south, can be considered as being “digitally disadvantaged”. They are on the other side of a digital divide. The patchy distribution of access amongst different parts of the population and lead to an unevenly distributed information society. Attempts have been made by non-profits (ICT4D) or social media giants (internet.org) to provide free access to useful services on mobile phones. Other country wide initiatives to address unequal access to hardware (one lap top per child) have not either bridged the gap. The digital divide continues to present a serious and significant threat to educational opportunity. To avoid the situation where the rich get richer while the poor get poorer, collective approaches that are informed by development principles, need to be implemented.

Digital wonders, digital dividends and digital divides. Three different stories about the impact of digital technologies on education and society. What is your reality? Probably a mixture of all the above.

**More perspectives**

Some suggest that digital is an essential element of higher education in the future.

“... digital technology is the fabric of nearly everything associated with teaching and learning....[it] is the core strategic enabler of learning in higher education.....”

Malcolm Brown

Others are sceptical about the exaggerated claims made by evangelists for a digital future. They pose difficult questions to “soltionism”. In an era of ambiguity and uncertainty, they refuse to give pat answers to questions about digital evolution and choose to expose a counter narrative

“Technology is not our enemy, our enemy is the romantic and revolutionary problem solver who resides within. We can do nothing to tame that little creature., but we can do a lot to tame its favourite weapon” “the Internet”

Evgeny Morozov

Others are aware of the changes that computers are introducing into education, but are concerned by the unintended effects of this introduction.
“In most contemporary educational situations where children come into contact with computers the computer is used to put children through their paces, to provide exercises of an appropriate level of difficulty, to provide feedback, and to dispense information. The computer programming the child”

Seymour Papert

Making sense of the educational changes in these technological times is not a simple task – although the marketing hype might make you think otherwise. Selwyn suggests that we need to take a step back and problematize education and technology. We need to have a critical understanding of what technology in education can do, and understand the current state of play before we articulate a vision for change. To start the unpacking process, we are going to begin with you. But instead of only paying attention to other people’s digital journeys, are you able to start telling your own stories about a future.

**Activity 1.1: What is your position in terms of ICT**

**Teaching/Facilitator guidelines for this activity**

LMS: The survey should be uploaded to the appropriate tools on the LMS

Smartphone: Use Google forms or Survey Monkey to create the form.

If f2f: Print out the survey

Below are two statements. Which one is a more accurate description of yourself. You may find that you identify strongly with one. The put a cross on the continuum that is closer to that answer. If you agree with both, then place cross in the middle. If you disagree with both, then cross out both and write your own description. Please note, there is no wrong or right answer.

<table>
<thead>
<tr>
<th>I am digital visionary who dreams of tech futures ………………...</th>
<th>I am only interested in using tech when it’s benefits have been proved.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am open to new innovations and new possibilities. ………….</td>
<td>Facts come first and I managing risks associated with innovation</td>
</tr>
<tr>
<td>I am confident about education in the future and comfortable stepping out into this changing environment ………..</td>
<td>I work with others to build educational environments that are both durable and flexible to weather an unpredictable world.</td>
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</tbody>
</table>
**Scenarios - A case for change**

Markets and technologies are not the only change drivers. You can make the case for change in your institution. Leadership and vision are pre-requisites to initiate organizational change.

Leaders can and should make a case for change. Instead of automatically taking on technosceptics/utopian’s version of the future, we’d like you to remember to start to trouble, defamiliarize or “problematise” the all the stories (or marketing) about digital, technology education and the future.

The shifts and realignments associated with advent of a digital world will most probably influence traditional forms of educational provision and practice, not necessarily for the better. Debates about the challenges and opportunities introduced by the internet on education, both for the connected and disconnected world are complex. Some foresee disrupted systems and intuitions, systematically being dismantled while others see these changes as an opportunity to reinvent schools and event reinvent learning. A vision for change is imperative if the digital dividends are indeed to be realised.

To respond appropriately to the opportunities and risks inherent with making choices about digital and education, leaders will need to go beyond looking to Twitter, TED or technology manuals, and ask themselves critical questions about the intersection of education and digital technology. A case for change is needed. We already know that digital technologies offer teaching and learning new flexibilities, expanded learning opportunities, and improved administration. Digital technologies have spread rapidly and created new opportunities for certain students. But this comes at a price. Not all students benefit equally. Technology can modify the world. The consequences of adopting technologies are vast, unpredictable and irreversible. Challenges need to be met head on. Digital does not make things better. It can make it worse. Your leadership role can affect the digital trajectory that your institution takes.

**Donna scenario**

“What will our graduates careers look in 10, 20 or 30 years time? At my college, there’s a clear vision for all our students futures. Digital lies at the heart of everything that we do. Our students have
indicated that they want to learn when and where they would like. They should have greater control over their learning, both in terms of flexibility and location.

They are here to improve their job prospects. Not to play with technology toys. There's been considerable investment in people, processes and technology as we seek to accomplish. We've installed a VLE with adaptive design, lecture capture is available for lecturers to use and students can submit work to their e-portfolios via an Android or iOS app.

I'm pleased to see that momentum developing around these technologies and it is clear that new capabilities are is developing amongst the staff and students. We want our students to be empowered life-long learners, able to leave, choose a career path and come back again and study further, if necessary. They should have full range of digital skills to show their future employers, apply for jobs and ultimately be productive citizens.

As part of my induction I went on this digital leaders course. For me the big win was connecting with other digital leaders in my colleges and others from around the world. Yes, there's some exciting new technologies out there. I particularly liked the possibilities that augmented reality offers our students. But we can’t afford to use technologies uncritically. I’ve said that we need to make our learning intentions clear before making expensive purchases. If we know what we want, then we can either use what is available or budget. This approach will allow us to develop digitally capable students, appropriately equipped and ready to thrive in the workspace.

Generally, students seem to take to learning with technology. But we are not assuming that this is true for everyone. The digital dashboard is something we created to find out about the when, how, by who and which questions that are inevitably asked. We can use it to tell who is or isn’t on the VLE, what apps or are being used and whether lecture capture cameras are active in which rooms. This kind of information helps us to gather an understanding of what's happening, who is coping (or struggling) and how best to manage our resources.

There are people I’ve never met who are working together to reboot learning. This is such an exciting time to be in education. They are all helping each other out to prepare our next generation. That’s, you know, when I go all “goosebumpy” when I think about people all moving in the same direction.

Digital is the future, it is important for everyone, both academics and teachers to incorporate this new approach into our institution. I believe it's important to improve everyone's digital capabilities to enable them to thrive in this new world. We never stop learning.”

**Mike case for change scenario**

“Let’s face it. Higher education is changing in the 21st century. Globalization, growing student numbers and smaller budgets have forced us to re-align our college priorities. No one can dispute the impact of technology on the music, television, publishing, transport or accommodation industries. Does education want to stay ahead of the curve? If so, we need harness the power of technology and equip our campus for this emerging information society.

We are getting there. The campus is blanketed with wi-fi, our BYOD policy allows students to bring any device onto campus. Our classrooms are smart rooms, equipped with smartboards and other multimedia. Current teaching and learning practices come from industrial paradigms. This must be rebooted. In the information society, a pen and exam pad are insufficient tools. Laptops, tablets and a stylus are necessities. Paper based classrooms are passé.

We have made it Blended Learning compulsory for all first year. Streaming lessons allow students to avoid the inconvenience of travelling to campus. They do not need to physically attend lectures. Their time table schedule automatically reminds them to login to the lecture capture platform they can stream it to any device. Even their mobile phones. Of course, students need to hand in their work electronically, be marked electronically and receive feedback almost in real time. Electronically submitted work also allows us to scan work for plagiarism.
If we are going to remain competitive, then it is imperative that we position ourselves as a college that embraces educational innovation. Disruptive digital changes (learning analytics, personalization, artificial intelligence and adaptive learning) hold much promise for the future. Digital empowers us to reboot our institution for the 21st century. We are determined to be ahead of the curve, embrace change and be a “tech savvy” leader, preparing our students for tomorrow.

**Activity 1.2: Case for change**

<table>
<thead>
<tr>
<th>Teaching/Facilitator guidelines for this activity</th>
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<tbody>
<tr>
<td><strong>LMS:</strong> After reading/watching each scenario, go to the comments section of the page and answer the ten questions (5 for Donna and 5 for Mike). You may also comment on whether the questions are appropriate for you.</td>
</tr>
<tr>
<td><strong>Smartphone</strong> Open to Google spreadsheet / Download the spreadsheet. You will see that a spreadsheet with two columns and six rows has been set up. Answer the questions listed in column one.</td>
</tr>
<tr>
<td><strong>If f2f:</strong> Create table with two columns and six rows. Entitle the first column Donna and the second column Mike. Then answer the 5 questions in each row.</td>
</tr>
</tbody>
</table>

**Donna’s interview**
- What is Donna’s vision for her institution?
- How has she gone about making a case for change?
- What has she proposed?
- How are students and academics affected?
- How will they achieve this change?

**Mike’s interview**
- What is Mike’s vision for his institution?
- How has he gone about making a case for change”?
- What has he proposed?
- How are students and academics affected?
- How will they achieve this change?

**Comparison between Donna and Mikes cases for change**
- Both Donna and Mike are making a case for change. They have articulated different ways that their institution is “rebooting education”. You’ve read and probably compared the two different cases for change. Use the questions below and think about how you are articulating your digital vision. Of the two visions, who is making a better case for change? Why?
  - Look at the vision that you selected. Is the case for change being made in response to strengths and opportunities or a reaction to weakness and threats?
How to analyse a critical event

Ed tech is full of photos of an imagined future learning environment, but who is framing the picture? Are you behind the lens taking snapshots? Or are you being told to look at the camera and smile.

As digital innovations make their way into learning environments, different people are telling their own stories about the changes associated with technologies. Some stories explain how easy the system is to use, others focus on the community that is supporting the system. Others use statistics to show how reliable the innovation is. These stories depend on their perspective. An administrator, IT manager or teacher sees technology quite differently (see table below).

<table>
<thead>
<tr>
<th>Teachers perspective</th>
<th>IT Managers perspective</th>
<th>Organisational administrators perspective</th>
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<tbody>
<tr>
<td>Ease of use</td>
<td>The innovation is intuitive for teachers and students to use with little to no training?</td>
<td>The innovation is easy to install and maintain. It uses a well know coding language and programmers can add updates if necessary.</td>
</tr>
<tr>
<td>Availability and Reliability</td>
<td>The innovation is available whenever the academics or students need it. They can rely on the system to staying up and running throughout the semester</td>
<td>The innovation has a reputation for 99.9% uptime. The maintenance windows are short and infrequent</td>
</tr>
</tbody>
</table>
Information and Communications Technology is here stay. High-tech, borderless innovations offer a window into tomorrow. What really matters is not the innovation, but your story. You need to give your perspective on the opportunities you think technology opens for your teaching and students learning. Whether the opportunities to open up new conversations around global issues or understand and appreciate different perspectives within a class, it is important that your voice is heard.

Are the stories being told your own stories. Are they about how technology has allowed you to rethink your own teaching and learning? Does your story snapshot offer a re-imagined educational landscapes. Or are the stories someone else’s and about how a technology will be used to re-inscribe older practices?

**Instructions**

To begin, you are going to be asked to unpack a critical incident or event that involves technology and education and how it shifted your thinking. It need not be a dramatic incident, but an episode which made you stop and think, or raised questions for you the role of ICT in a learning environment. What makes the event or experience is critical (or remarkable, evocative, problematic) is that the incident lead you to question an aspect of your beliefs, values, attitude or behaviour.

**Critical Incident Example 1 – A library in my classroom**

My history teaching was classroom based. We had little access to information apart from worksheets and textbooks. When doing a project, my class could use the library but I had to book a research visit to the library two weeks in advance. Access to information was limited. The library was oversubscribed. Reference books were old, sometimes out of date, had to be shared by 3 other classes (120 students) and could not be taken home. Most assignments had to revolve around a scruffy textbook. We had no other means to access information.

In my second year of teaching I was selected to participate in a teacher exchange. There I an Internet classrooms, a cluster of students around their own computer in a middle of a library. Students had unlimited electronic access to relevant materials and were able to access information anytime in the classroom. I went back to my school with a new vision for access. Information was no longer restricted to paper. I bought a second hand laptop and took it to school.

<table>
<thead>
<tr>
<th>Support</th>
<th>The innovation has a backup team and someone is available to respond to help requests by academics and students?</th>
<th>The innovation does not require additional support staff and we can relay one outside resources to help when our in-house team requires assistance</th>
<th>The innovation can be supported competently and there is budget to leverage outside support.</th>
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Adapted from Technology Adoption Decisions for Mission-Critical Learning Infrastructure. CC BY 4.0 - Joshua L. Mindel & Kevin Kelly
Incident description
Unpacks the key features of the incident, chronology of incident is clearly understandable
Describes either key features or chronology of the incident
Does not describe key features of the incident or include a chronology of events

Rationale for the choice of incident
Rational for the choice of incident is clear. Shows how thoughts and actions were changed
Rational for choice of incident and/or indication of changed thoughts or actions are given.
No rational given for the choice of incident. No indication of changed thoughts or actions

Reflection on the significance / impact of the incident
Reflection shows why the incident affected emotions, thoughts beliefs and actions
Incomplete reflections of why the incident affected emotions, thoughts, beliefs and actions
No reflection and does not show how the incident affected their emotions, thoughts, beliefs and actions

Summary
You have unpacked a critical event or experience in your life that showed your perspective on technology and education. These ‘why questions’ or reflections about the critical event can help you articulate what your case for change is. Do you want to frame and shape your institutions future learning environment? Then unpack the incident, show your perspective.

Later on, you will have the opportunity to turn it into a story that EXPLAINS you core beliefs about the opportunities afforded by technology and education. A story that describes what students and/or academics teachers would be doing if your institution school was using digital resources to effectively support your overall vision for change.

Making sense of the data
We’ve suggested thus far that digital leaders start the decision making process with a vision. Instead of starting with a technology solution, we’ve asked you to unpack your local experience and make a “case for change”. You’ve drawn this from your own experience, or personal knowledge or drawn insights from feedback from colleagues, academics or students. We call this “local knowledge” and it is an important source of information to guide decision making.

Local knowledge cannot be the only basis for decision making. Systematic information-gathering and analysis is also an integral part of setting decision criteria and making informed choices.

Before we make a case for change, we also need to look at what is needed. When making decisions, there is a tension between trying to identify needs vs offering solutions. Information (or data) about inputs, processes, outputs, outcomes, satisfaction etc. allows us to identify needs.

Gathering useful information requires that data be systematically collected, organised and reported. Data sources need not only be questionnaire, or surveys. They can be test scores, class averages, reports, attendance numbers. Big data offers opportunities to drill down into the excessive amounts of data and create data dashboards with information mined from a range of sources.

The following are example/model/template surveys or questionnaires that you can use to systematically gather data to identify needs that might inform your decision making. These questionnaires are taken from the OER “Technology-Enabled Learning Implementation” (developed
1. Questionnaire on Learner Use of Technology (see pg 59)
2. Questionnaire on Faculty Use of Technology for Teaching and Learning (see pg 69)
3. Questionnaire for Survey of Technology-Enabled Learning in Educational Institutions (see pg 80)
4. Interpretation of Preparedness for Technology-Enabled Learning Questionnaire Results (see pg 88)
5. Technology-Enabled Policy Template (see Pg 89)

You can adapt, reuse, remix, draw from, these resources to relate them to your context – to acquire and interpret information on technology in an educational institution (or organisation), to make better informed decisions.

Let’s engage with one of the questionnaires now (Item 3 in the list above). Find a partner and interview each other to fill out this questionnaire, as if you were a researchers gathering information on each other’s institutions/departments.

**Questionnaire for Survey of Technology-Enabled Learning in Educational Institutions**

The primary aim of this questionnaire is to assess the Technology-Enabled Learning environment and enabling policies in educational institutions.

The questionnaire shall be completed by a responsible officer in a university/institution to provide relevant data.

*Please respond to all the questions by following the instructions.*

### A. About Your University/Institution

1. Name of the university/institution: ____________________________
2. Website: ________________________________________________
3. Number of students enrolled: _______________________________
4. Number of faculty and academic staff employed: ______________
5. Number of non-teaching and support staff employed: ____________
6. Level of teaching (tick ✓ all that apply):
   - [ ] Undergraduate
   - [ ] Graduate or postgraduate
   - [ ] Doctoral research
7. Status of your institution: [ ] Public  [ ] Private non-for-profit  [ ] Private for-profit

### B. Technology-Enabled Learning Environment in the University/Institution

2.1 Number of desktop computers/tablets/laptops in the university/institute connected to the Internet:
   2.1.1 Desktop computers: ________________________
   2.1.2 Tablets: _____________________________
   2.1.3 Laptops: ____________________________
2.3 If yes, for whom is the broadband Internet made available? (Tick ✓ all that apply.)
   □ Officials and staff □ Faculty members □ Students □ Researchers □ Visitors

2.4 Where do you provide access to the broadband Internet? (Tick ✓ all that apply.)
   □ Classrooms □ Library □ Hostels
   □ Faculty rooms □ Laboratories □ Reception lounge
   □ Seminar halls □ Students’ common rooms □ Open areas

2.5 How do you get broadband Internet connectivity at the university/institution?
   ○ Through a government-supported Internet service provider
   ○ Through a private Internet service provider

2.6 Current level of Internet bandwidth available in the university/institute is:
   ○ <1 Gbps   ○ 1-5 Gbps   ○ 6-10 Gbps   ○ >10 Gbps

2.7 Do you have Wi-Fi/wireless Internet connectivity on your campus?  □ Yes  □ No

2.8 Is there any access control in place for restricting any particular kind of online content from
   being accessed or downloaded (reasons could be related to limitations on Internet speed or
   security concerns)?  □ Yes (Go to 2.9)  □ No (Go to 2.10)

2.9 If yes, what kind of content do you not allow users to access or download? (Tick ✓ all
   that apply.)
   □ Social media (e.g. Facebook, Twitter, LinkedIn, Instagram, etc.)
   □ Video channels (e.g. YouTube, Vimeo, etc.)
   □ Chat/messengers (e.g. WhatsApp, Viber, Skype, GTalk, etc.)
   □ Audio channels (e.g. iTunes, online MP3 players, etc.)
   □ Mass resignation downloads of videos, audios, reference books, etc.
   □ Software download (e.g. Cnet.com, Sourceforge.net, etc.)
   □ Adult content
   □ Emails

2.10 Does your university maintain any official profile/institutional group on social media platforms?
   □ Yes (Go to 2.11)  □ No (Go to 2.12)

2.11 If yes, where do you maintain an official profile/group on social media platforms? (Tick ✓ all
   that apply.)
   □ Facebook □ Twitter □ Google+
   □ YouTube, Vimeo or similar □ Blog (using Blogger or Wordpress or
   within institutional website/CMS)
   □ Email-based discussion forums □ LinkedIn
   □ Institutional wiki page □ Flicker, Picasa Web Albums, Instagram or
   similar for photo sharing

e-Classrooms

2.12 Do you have any e-classroom facilities in your university/institution, integrating ICT in
   classrooms?  □ Yes (Go to 2.13)  □ No (Go to 2.15)

2.13 If yes, what kinds of hardware are available in e-classrooms? (Tick ✓ all that apply.)
   □ Public address system □ SMART Board or interactive whiteboard
   □ LCD projector (fitted with desktop computer/laptops/DVD players)

2.14 Number of e-classrooms you have: _______
Educational e-Content Creation

2.15 Do you have any educational e-content or an audio-visual production unit/studio/centre?
   • Yes (Go to 2.16)  • No (Go to 2.17)

2.16 Number of e-content materials produced in the last year:
   • Course-related textbooks: ______
   • Audio lessons: ______
   • Video lessons: ______
   • Multimedia lessons: ______
   • Online courses: ______

2.17 Do you participate in any e-content or audio-visual repository/content-sharing platform for disseminating your produced educational content?
   • Yes (Go to 2.18)  • No (Go to 2.25)

2.18 If yes, what type of external content-sharing platform/repository do you usually use? (Tick (√) all that apply.)
   □ State-level repository  □ National repository
   □ Regional repository  □ International repository

2.19 Provide website addresses of the repositories that your institution participates in/contributes to: __________________________

2.20 Do you have an institutional video channel (e.g. YouTube or similar)?
   • Yes (Go to 2.21)  • No (Go to 2.22)

2.21 Provide a link to the video channel: __________________________

Open Educational Resources

2.22 Are the educational e-contents or audio-visual materials produced by your university/institute available with a Creative Common licence?
   • Yes (Go to 2.23)  • No (Go to 2.27)

2.23 If yes, do you have an institutional repository for OER?
   • Yes (Go to 2.24)  • No (Go to 2.25)

2.24 If yes, provide the website address of the repository: __________________________

2.25 Is your university/institution a member of any OER consortia or any formal OER network?
   • Yes (Go to 2.26)  • No (Go to 2.27)

2.26 If yes, please give their names: __________________________

Online Courses

2.27 Has your university/institution produced or designed any online course?
   • Yes (Go to 2.28)  • No (Go to 2.29)

2.28 How many online courses (including MOOCs) do you offer in the current year?
   Number of eLearning courses: ______

2.29 What is the total number of learners studying online in your university/institute?
   Number of learners: ______

2.30 Nature of online courses (tick (√) all that apply):
   □ Completely online  □ Blended (face-to-face with some online component)
   □ Online (with limited face-to-face contact)

2.31 Do you have any external partners for collaborative designing and delivery of online courses?
   • Yes (Go to 2.32)  • No (Go to 2.33)

2.32 If yes, what type of external partner or collaborator do you usually have?
   • Public state-level institution  • Private for-profit organisation
   • Public national-level institution  • Private not-for-profit organisation
Other Online Facilities

2.38 Please indicate which of the following resources/services/spaces are provided by your institution (tick ✓) all that apply:

<table>
<thead>
<tr>
<th>Resources/Services/Spaces</th>
<th>Available</th>
<th>Not available</th>
<th>Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td>eClassroom facilities (e.g. computers, projection systems, lecture capture systems, SMART boards, etc.)</td>
<td>☐</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Computer labs (for practical and Internet access)</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Email services (institutional)</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Learning Management System (e.g. Moodle, etc.)</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>ePortfolio</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Network bandwidth/speed of Internet (download and upload)</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Wi-Fi access</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Online or virtual technologies (e.g. network or cloud-based file storage system, Web portals, etc.)</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Resources/Services/Spaces</th>
<th>Available</th>
<th>Not available</th>
<th>Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to software (e.g. MATLAB, GIS applications, statistical software, qualitative data analysis, graphics software, textual or image analysis program, etc.)</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Download and use of free and open source software for teaching and learning</td>
<td>☑</td>
<td>☑</td>
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</tr>
<tr>
<td>Support for maintenance and repair of ICTs</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Access to data storage</td>
<td>☑</td>
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<tr>
<td>Data visualisation software</td>
<td>☑</td>
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<tr>
<td>Citation/reference management software</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Plagiarism detection software</td>
<td>☑</td>
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<tr>
<td>Institutional repository for sharing of research</td>
<td>☑</td>
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<tr>
<td>e-Journals</td>
<td>☑</td>
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<tr>
<td>e-Books</td>
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<tr>
<td>Citation databases</td>
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<tr>
<td>Bibliographic databases</td>
<td>☑</td>
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<tr>
<td>e-Newspapers</td>
<td>☑</td>
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<tr>
<td>e-Theses and dissertations</td>
<td>☑</td>
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<tr>
<td>Patent databases</td>
<td>☑</td>
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<tr>
<td>e-Proceedings of conferences</td>
<td>☑</td>
<td>☑</td>
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<tr>
<td>Statistical databases</td>
<td>☑</td>
<td>☑</td>
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</tr>
</tbody>
</table>

Training on Technology-Enabled Learning

2.34 Do you organise regular training for faculty and learners to use technology effectively?
☐ Yes (Go to 2.35)  ☐ No (Go to 2.38

2.35 If yes, how often do you organise training?
☐ Once a month  ☐ Quarterly  ☐ Yearly
☐ Twice a month  ☐ Half-yearly  ☐ As and when required

2.36 Total hours of training organised in the last year: ________

2.37 Total number of teachers trained in the use of technology for teaching and learning: ________

Policy issues for Technology-Enabled Learning

2.38 Is there a policy for ICT use in teaching and learning in your university/institution?
☐ Yes  ☐ No  ☐ In development

2.39 Is there a strategy for Technology-Enabled Learning in your university/institution?
☐ Yes  ☐ No  ☐ In development
2.40 Is there an ICT policy in your university/institution covering what technologies to use and not use for teaching and learning? ○ Yes ○ No ○ In development

2.41 Is there a privacy and data protection policy in your university/institution? ○ Yes ○ No ○ In development

2.42 Is there a policy on dealing with plagiarism in your university/institution? ○ Yes ○ No ○ In development

2.43 Is there a policy for the use of Open Educational Resources in your university/institution? ○ Yes ○ No ○ In development

2.44 Is there a system in place for the use of open source software in your university/institution? ○ Yes ○ No ○ In development

2.45 Is there a workflow and escalation procedure for repair and maintenance of ICTs in your university/institution? ○ Yes ○ No ○ In development

C. Institutional Preparedness for Technology-Enabled Learning

3.1 Please respond to the following statements using the codes below:

**Codes:** 1= Strongly disagree or does not exist; 2= Disagree or only marginally demonstrates existence; 3= Neither agree nor disagree or existence or otherwise is difficult to explain; 4= Agree or it does exist; 5= Strongly agree or it definitely exists and is well established.

<table>
<thead>
<tr>
<th>Statements</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy</strong></td>
<td></td>
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<tr>
<td>There is a well-documented Technology-Enabled Learning policy.</td>
<td>○</td>
<td>○</td>
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<tr>
<td>The Vision and Mission of the Technology-Enabled Learning policy are aligned with the mission of the organisation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>The Vision and Mission of the Technology-Enabled Learning are well understood across the organisation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>There is a commitment on the part of institutional leaders to use technology to achieve strategic academic goals.</td>
<td>○</td>
<td>○</td>
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<tr>
<td><strong>Strategic Plan</strong></td>
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<tr>
<td>There is a strategic plan for the implementation of Technology-Enabled Learning.</td>
<td>○</td>
<td>○</td>
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<tr>
<td>The strategic plan for Technology-Enabled Learning has measurable goals and outcomes.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>The strategic plan for Technology-Enabled Learning is approved by the senior management of the organisation and is supported by adequate financial provisions.</td>
<td>○</td>
<td>○</td>
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<tr>
<td><strong>IT Support Department</strong></td>
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<tr>
<td>The organisation has an IT department that handles procurement, installation and maintenance of technologies for teaching and learning.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>There is an ICT policy in place, which is implemented by a high-powered committee in the organisation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The head of the IT support department reports to senior management and is responsible for overall functioning of the technology in the organisation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The head of the IT support department is well qualified and up to date in order to manage the technological requirements of the organisation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td><strong>Statements</strong></td>
<td>1</td>
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<td>5</td>
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<tr>
<td><strong>Technology</strong></td>
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<tr>
<td>There is adequate hardware infrastructure for teaching and learning (e.g. access to computers for students and learners).</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>There are adequate applications and software for teaching and learning (e.g. access to appropriate software, intranet, Learning Management System, etc.).</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>There is adequate networking infrastructure in the organisation (e.g. access to adequate bandwidth).</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>There are adequate policies and procedures in place to protect privacy and organisational data.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Content</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>There is support available for the creation of digital multimedia content in the organisation (e.g. production of eCourses, audio and video materials, animation, etc.).</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>There are instructional designers in the organisation or faculty members are trained to organise learning content appropriately.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Teachers have adequate access to the online systems to develop courses for Technology-Enabled Learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>Documentation</strong></td>
<td></td>
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<tr>
<td>There is a variety of help available to support teachers and students in using technology effectively.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Lessons learned in the implementation of the Technology-Enabled Learning are stored and shared within the organisation for others to access and learn from.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>The workflow processes and responsibilities to implement Technology-Enabled Learning are well documented in the organisation.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>Organisational culture</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Faculty and staff members are willing to learn about new technology in the organisation.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Faculty and staff members support each other easily.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>There is a culture of knowledge creation and sharing in the organisation.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td></td>
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</tr>
<tr>
<td>Leaders in the organisation are involved in the implementation of Technology-Enabled Learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Senior management in the organisation regularly review, monitor and evaluate the progress of Technology-Enabled Learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>The top leadership of the organisation is supportive of Technology-Enabled Learning and provides encouragement and motivation to the faculty and staff to achieve the academic goals.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

**Statements**

<table>
<thead>
<tr>
<th>Human Resources and Training</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty members are qualified and trained to use technology for teaching and learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Faculty and staff members receive regular training to update them in the use of Technology-Enabled Learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>There are adequate staff to support Technology-Enabled Learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>The organisation has a structure in place to create teams for content development and delivery of Technology-Enabled Learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Faculty members trust the support received from instructional designers and technology support staff while developing and delivering the courses.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>The IT staff members are highly skilled and trained to provide the needed support.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

**TEL Champions**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are early adopters of Technology-Enabled Learning in the organisation.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>There are TEL champions in the organisation who support and care about pedagogic innovations.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>There are faculty members who can take leadership roles in developing appropriate policies and a Technology-Enabled Learning strategy for the organisation.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>There are TEL champions to research and disseminate good practices in Technology-Enabled Learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

**D. Comments**

There is a need to develop a Technology-Enabled Learning policy and strategy in the organisation.

[Descriptive Comments]

Thank you.
You can run this exercise with yourself, with a partner, or actually use it to gauge an institutional measure of the state of technology-enabled learning for whatever topics.

**Activity 1.3: Digital transitions**

**Teacher/Facilitator Guide**

**LMS**  Place the script below on the LMS. Get students to work together in pairs and remix / reuse the script below about a vision for change. Read it and record it and submit it.

**Smartphone**  Get students to access the script and record yourself on your mobile device, save it as an MP3 and upload it to Google drive

**If f2f**  Pair up, write a script together, and present to the class. Please record while you present

You’ve read / watched two interviews with change leaders. You’ve also reflected on a critical incident. Now it's time to combine the two and create your presentation about a vision for change. If your critical incident can be used, then go ahead and apply it to this speech. Otherwise, choose an education and technology approach. To assist, you’ve been provided with a draft storyboard with prompts. Improve it and then complete the activity.

How are you dealing with the digital transition in your institution?

Are you watching TED stories about the future of education? Or are you reading ranking reports comparing admired institutions with each other? Are you on Twitter, following futurists and expecting their guidance and advice? Or are you reading technology handbooks looking to follow a set of best practices? Or are you in contact with a consultant with a multi-national corporation (like Microsoft, Google, Apple etc) what has interests in education technology. Or are you doing all of the above works, and then attempting to go ahead and trying out digital approaches yourself.
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dramatic Question:</td>
<td>With your critical incident in mind, what question would you like to pose to the listener? Have you started to ask questions about how education is shaping up? I’d like you to ask yourself .....(Ask the question)</td>
</tr>
<tr>
<td>2</td>
<td>Personal Narrative:</td>
<td>Think of your critical incident. Introduce your case for change The educational world (amongst many other things) is changing rapidly and if we are to ..... The challenge we are facing....</td>
</tr>
<tr>
<td>3</td>
<td>The problem</td>
<td>Articulate, as best as you can, the problems, limitations &amp; implications Today, those in education think that.... But if we stick to the tried and tested........then we are limited by..... The issue is our... I’ve identified the following problems</td>
</tr>
<tr>
<td>4</td>
<td>What are the needs</td>
<td>Draw data from the survey to identify key needs Our survey shows that the following is needed...</td>
</tr>
<tr>
<td>5</td>
<td>What do you propose?</td>
<td>Introduce a new approach informed by your critical incident reflections and the data that you have chosen to highlight WE need to confront the reality that ....... We can’t run away from ............... If we take up (Challenge), will allow us to ....... The best way to ...............</td>
</tr>
<tr>
<td>6</td>
<td>Who Benefits?</td>
<td>Who wins if the challenge is addressed? Who wins if ...... This is a win win for.... The value add for ... is</td>
</tr>
<tr>
<td>7</td>
<td>Hindrances</td>
<td>What are the risks ..costs, time and commitment But this is not to be taken lightly. ..... These particulars we will have to consider when ......</td>
</tr>
<tr>
<td>8</td>
<td>Stakeholders</td>
<td>Opinions from stakeholders I’ve chatted to....and they agree that.....</td>
</tr>
<tr>
<td>9</td>
<td>Success criteria</td>
<td>How will we know we”ve achieved When those we have been affected by our intervention come up to us and.....</td>
</tr>
</tbody>
</table>
Our generation has the luck and the honour and the responsibility to ..... We will know when we have succeeded in the medium term when we....

| 10 | Conclusion | Bring the challenge and beneficiaries together | I’m sure we will learn a lot together and most important I’m also convinced it will be a lot of fun as we ask the most important question of them all about digital - “so what do I do about it?” |

Show someone else the script and ask them to provide feedback according to the listed criteria.

**Assessment**

1. Information and Communication Technologies (ICT) are always changing. You will be best positioned to cope with the changes if you:
   A. Spend 30% of your budget on research and consultants to keep up your systems
   B. Make informed decisions about the changes, and your own systems
   C. Always implement and integrate new ICTs as they come out onto the market
   D. None of these

2. Which story best suits the following scenario: “Users who do not make a distinction between education and technology, but see the internet as a basic necessity, where unrestricted access to data, information and knowledge is considered as normal”
   A. Digital residents
   B. Digital dividends
   C. Digital scholar
   D. All of these

3. People without access to highly-connected digital spaces, high-speed bandwidths, free or cheap online access are more likely to see
   A. The digital as an untapped wonder
   B. The digital space as a dividing, exclusive space
   C. The digital as an urgent need
   D. None of these

4. Whether a user is online or not, a digital education leader can be concerned with which of the following, to better position themselves to make a difference:
   A. Identifying and understanding the social issues affecting their communities, peoples, contexts
   B. Digital literacy rates, and training on how to improve them
   C. Developing relationships with politicians to channel funds towards digital initiatives
D. All of the above.

5. For the developing world contexts, bridging digital divides will, with certainty, improve:
   A. educational quality
   B. economic competitiveness
   C. inclusion and well-being
   D. All of the above.

6. For the developing world contexts, bridging digital divides have the potential to improve:
   A. educational quality
   B. economic competitiveness
   C. inclusion and well-being
   D. All of the above.

7. In contexts where technology has a positive impact on education, the story to describe the situation is one of
   A. Digital wonder
   B. Digital dividend
   C. Digital divides
   D. None of these

8. Digitally-disadvantaged users are most likely to be located in
   A. Developing contexts
   B. Over-developed contexts
   C. Contexts where the users do not have much control over their online experiences
   D. Everywhere

9. When articulating a vision for change, whose needs should you meet first as your primary stakeholders?
   A. Students
   B. Teachers
   C. Policy-makers
   D. All of the above

10. Which of the following describes technological-determinist position?
    A. Digital technology is not our enemy, our enemy is the romantic and revolutionary problem solver who resides within.
    B. Only by increasing our investment in digital technologies can we solve the literacy issues we face.
    C. Digital technology is the fabric of nearly everything associated with teaching and learning. It is the core strategic enabler of learning in higher education.
    D. All the above

11. As a digital visionary, I would choose to the following as sources for new information on my institution and ICTs
    A. Research published by reputable organisations
    B. Conducting a research initiative and using these results
    C. Implementation and learning by trial and error
12. A vision for institutional change should include which of the following elements as essentials:

A. an assessment of the current state of the organisation
B. a statement of where you and your institution would like to be in the future
C. multiple various stories and perspectives on the benefits of the digital
D. A and C

13. Looking back on your experiences, if you had to choose and study a critical technology-event for one that had a significant impact on your institution, community, or life, in order to understand your situation better, which of the following would yield rich material to reflect on:

A. An event which incurred the highest recovery costs (e.g. a fire/flood destroying infrastructure)
B. An event which resulted in a difference, in terms of beliefs and thinking, before and after the event
C. An event which you consider was handled in the smoothest, most efficient way, and should be considered best-practice
D. All of the above

14. With younger people typically being the leaders in technological-familiarity, the onus should be least influenced by

A. the incoming generational cohort to drive, teach and change the institution they enter into
B. your institution to drive, lead and change in order to accommodate the people they receive
C. national- and market- factors to drive, implement and announce change for your institution
D. All of the above

15. How could you describe an approach to updating policies for your personal context?

A. Policies and procedures are best updated if they keep up with international policies, global market events, and changes in technology
B. Policies and procedures should remain responsive to local student and social changes
C. Student movements for change are an indicator of failed policies and procedures
D. All of the above

16. Considering recent social movements around the world, being a digitally-informed citizen has been crucial to organizing, mobilising and effecting social change. Which would be least affected by the utilisation of technology?

A. Institutional policies and procedures
B. Social attitudes and beliefs
C. The global market economy
D. None of these

Check Your Progress:
Unit 2: The zone of uncertainty

Introduction

In the previous section, we suggested that there were many different stories that those involved with education told about their relationships to technology. We also looked at how we can use data to ascertain whether digital interventions might address certain needs.

The relationship between technology, education and change is complex. An understanding of the impact of technology on education will only be as good as the questions we can ask about technology in the past, at present and the future. But sometimes it’s difficult to frame those questions. You don’t know what you don’t know, so it is difficult to know what to ask. If we avoid these critical questions, the same fantasies about technology, education and change will simply repeat themselves.

Upon completion of this unit you will be able to:

- Familiarise yourself with what might happen when people in organisations initiate change.
- Explore how an organization can use horizon scanning to prepare themselves for emerging innovations and take steps to understand the context for the envisaged change
- Access information and opinions from communities of experts, research and available literature and use these insights to identify possible weaknesses, opportunities and threats associated with digital innovations

The Zone of uncertainty
You heard different cases for change and constructed your own vision statement in the previous section. You may now be wondering how to make that vision a reality and enable your institution and its various constituents to enact these vision statements and begin to prepare? Apart from gazing into a crystal ball, how do we make sensible decisions and prepare ourselves and our institutions? There’s no single answer.

The agenda behind change can come from a range of sources. Sometimes, innovations unintentionally introduce incremental changes. Sometimes innovations are deliberately used to forcefully drive change. External factors, relating to economy, politics or government policies, impacts the intuition and change results. And other times, change is driven by stories of an entrepreneurial genius and/or the inevitable disruptive innovation (Waters quote).

“There must be an “industrial revolution” in education, in which educational science and the ingenuity of educational technology combine to modernize the grossly inefficient and clumsy procedures of conventional education. Work in the schools of the future will be marvelously though simply organized, so as to adjust almost automatically to individual differences and the characteristics of the learning process. There will be many labor-saving schemes and devices, and even machines – not at all for the mechanizing of education, but for the freeing of teacher and pupil from educational drudgery and incompetence” Pressy in a 1933 book entitled Psychology and the New Education,

The history of ed tech futures can show that machines, devices, technologies and computers have regularly been expected to improve education. "Mechanised" learning goes back to 1809, when H. Chard patented a machine to teach reading called the Mode of Teaching Reading machine. Isaiah Boomstead famous remarks about the effects of the blackboard. Edison believed that the film would replace textbooks and teachers. Apart from the word “industrial” in quote above, these few sentences could mistaken for an education technology press release. It’s easy to laugh at the foolishness of these past predictions. But, such predictions about future technologies impact are not uncommon today.

Audrey Watters suggests that there’s a form of amnesia when it comes to education and technology. She argues that Silicon valley is attempting to tell a story about the future of education that "emphasises products, not processes, the private and not the public, "skills" not enquiry. Stories of past educational technologies are important The give the present a different perspective and offer guidance for the future.

It is easy to get lured into change for change sake. To make the object (technology) the focus of the change, to assume that one size fits all. We listen to hear the visions of politicians or entrepreneurs’ instead of recognising that there are a range of change routes to effect change. Some more successful than other.

The history of educational technologies warns us that change is rarely as instantaneous or as totalizing as many would have us believe (Selwyn) New technologies rarely have a predictable effect on education. We need to remember that predictions about the future are not neutral. They are not objective. they are often invested and promoted by leaders with particular agendas.

Leaders need to be asking what innovations are out there, but also reflect on how they and their organisation is doing. Directive change want to move fast. Participative change asks what are your questions where may we look for answers. It seeks to understand the lie of the land and involve others in asking and answering questions. In this chapter we will be looking at environmental scanning and two processes that can be used to understand the territory
Introducing Environmental Scanning

Environmental scanning aims to identify trends, situations, events and issues which might influence future decision making. It seeks to identify external opportunities and threats to an institution. Organizations ARE affected by circumstances, conditions and influences, and these changes has an effect on plans and forecasts. The goal of horizon scanning is to "capture, share and integrate relevant knowledge to facilitate informed decision making right through an organisation". Scanning enables decision makers both to “understand the external environment and the interconnections of its various sectors and to translate this understanding into the institution’s planning and decision making processes”.

Types of scanning

There are few guidelines on how to do environmental scanning. There are no hard and fast rules that lead to "correct" interpretations. It can also become unnecessarily complicated. One of the most helpful distinctions to make, when thinking about environmental scanning, is to distinguish between deliberate and incidental scanning

**Active Scanning**: the strategic planning process deliberately uses means to focus attention on information resources that are found in external and internal environments

**Passive Scanning**: the unstructured and informal ways that we detect changes and trends and feed this information into decision making. We read websites, newspapers articles, interact with other academics, students and industry and these incidental connections contributes to a sense of the future

Are you an environmental scanner?

- Are you open to new idea, even if they might seem unusual?
- Are you a systems thinker
- Are you curious
- Do you accept diversity
- Are you happy thinking out of the box
- Do you try to understand what happened in the past
- Do you challenge assumptions about the future?
- Are you aware of your own world view?
- Are you able to synthesis information into useful document or artifacts?
- Are you comfortable with technology and with exploring it?

The process of environmental scanning

1) Identify your scanners

When looking for scanners, what is important is a diversity of opinions. To ensure that you adequately scan the internals and external environment, you will need to identify voices and information resources in many sectors. They should have a range of abilities, experiences, and judgments.

2) Decide on type of scanning

Decide scanning commitment levels. You may want informal passive scanning, formal but irregular active scanning and formal and regular scanning.
• Passive scanning requires less resource commitment from the institution, and a willingness on the part of the individual to reflect

• Active scanning requires specific time to be set aside. It need not be a laborious effort. For example, interviews with decision makers regarding their view of the most critical trends and developments and the ability to take advantage or whether these development can also be an active scan.

3) Seek signs and signals for change

Look for signals of potential events on the horizon. Look at forecasts of experts, look for indirect effects.

Higher Education Horizon Report by the New Media Consortium


Innovating Pedagogy by the Open University


Higher education’s top 10 strategic technologies, by Educause

- 2016 - https://library.educause.edu/resources/2016/1/higher-educations-top-10-strategic-technologies-for-2016

4) Make it meaningful

Putting all these insights together meaningfully. Some might curate all these changes using tools available. Other might collaborate and use a SWOT analysis as a means to engage others in discussions about change.
SWOT - Strengths, Weaknesses, Opportunities, Threats

SWOT is an acronym that stands for strengths, weakness, opportunities and threats.

- **STRENGTHS** – What you are doing right
- **WEAKNESS** – What you are doing wrong
- **OPPORTUNITIES** - Where can I get ahead of the curve
- **THREATS** – Where may we find our future competition

Traditionally the first two quadrants were used by an organization to ascertain what they saw from within their organization. From the two different perspectives, here are some of the questions that you may ask

- From your perspective, what does your institution do better than other institutions?
  - We have a comprehensive electronic library, with most comprehensive access to the most journals across the country. This introduces a new flexibility and makes it possible for post graduate students to access university resources when at home.

- What are some of the growing success stories that you hear repeated frequently? e.g. Growing post graduate student numbers with increasing Phd

- Why would students chose to attend your institution and not another? e.g. Able to access scholarships and bursaries to study further

- What do many academics and students have access to that other institutions don’t? e.g. Reciprocal relations to other tertiary institutions

- What do other institutions see as your strengths? e.g. Our scholarly traditions

**Weaknesses**
• From your perspective, where does your institution fall behind compared to others? e.g. Network infrastructure is slow and out of date. Access resources from beyond the campus is very slow.

• Are there particular deficiencies that nobody wants to acknowledge? e.g. LMS downtime LMS is down, high ed tech turn over. University has not embraced changed and is choosing to ignore it

• Are there issues which is causing student’s attrition? e.g. High failure rate amongst undergraduate students

• What are academics unable access and this place them in an uncomfortable with? e.g. Up to date and interactive learning resources

• What do others institutions see as your weaknesses? e.g. Repeated failures to innovate keep

Here is a sample SWOT Analysis, for your consideration.

<table>
<thead>
<tr>
<th>Example of a SWOT Supporting a Strategic Planning Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vision:</strong> St Charles Primary School achieves the UN development goal of having 100% of our children, boys and girls alike, graduate primary school.</td>
</tr>
<tr>
<td><strong>Mission:</strong> The mission of St. Charles Primary School is to provide every child between ages 5 and 14 in the school’s defined catchment area the educational experiences needed to achieve a Primary School Diploma as defined by the state curriculum guidelines.</td>
</tr>
<tr>
<td><strong>SWOT Analysis</strong></td>
</tr>
<tr>
<td><em>(Note this is an abbreviated form of the analysis results).</em></td>
</tr>
<tr>
<td><strong>Internal Risk Assessment</strong></td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>• Teachers committed to the goals.</td>
</tr>
<tr>
<td>• Solid curriculum and lesson guides available to teachers.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>External Risk Assessment</strong></td>
</tr>
<tr>
<td><strong>Opportunities</strong></td>
</tr>
<tr>
<td>• Government committed to UN Development goals.</td>
</tr>
<tr>
<td>• Potential to get UNESCO and other international grants if school meets its goals.</td>
</tr>
<tr>
<td>• Community associations could be encouraged to support the school goals.</td>
</tr>
</tbody>
</table>

Curation

You might have heard the term “Curation”. Off the web, the curator role was occupied by a specialist employed by a museum or gallery. On the web, it’s one of the many overused internet buzz words and we have steadily become familiar with. Within social media platforms, the concept of “curation” is typically associated with the activities of those who use different platforms and tool to select and describe display digital content.

Curation in a learning context referred to the process of sorting through the vast amounts of content on the web and presenting it in a meaningful and organized way around a specific theme.

We’ve appropriated the term “curation” to describe the activities associated with collecting links about digital education futures. While the curator is not responsible for creating the content, the curator shepherds all involved to make sense of their particular contribution, identifies the best and most relevant content and brings it forward. The people who choose to take on this role will be known as content curators.

**Activity 2.1: My Edtech radar**

<table>
<thead>
<tr>
<th>Teacher/Facilitator Guidelines</th>
</tr>
</thead>
</table>
LMS: The survey should be uploaded to the appropriate tools on the LMS  
Smartphone Use Google forms or Survey Monkey to create the form.  
If f2f: Print out the survey

Below are five opinions about digital futures and education. Do you strongly agree or disagree with them or are you not sure? The put a cross on the continuum that corresponds with your opinion. Then offer a reason for your answer. Please note, there is no wrong or right answer.

**Recently, there has been a rapid increase spike in interest in using digital technologies in schools and universities.**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>I’m not sure</th>
<th>Don’t think so</th>
<th>Rubbish</th>
</tr>
</thead>
</table>

**Education is broken but digital innovations offers a means to fix it**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>I’m not sure</th>
<th>Don’t think so</th>
<th>Rubbish</th>
</tr>
</thead>
</table>

**A tech infrastructure (learning management system, network connections, data projectors, monitors, keyboards, tablets) should be included in the minimum standards for a modern classroom**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>I’m not sure</th>
<th>Don’t think so</th>
<th>Rubbish</th>
</tr>
</thead>
</table>

**More educational job adverts are listing elearning experience as one of the essential requirements for a job**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>I’m not sure</th>
<th>Don’t think so</th>
<th>Rubbish</th>
</tr>
</thead>
</table>
Strongly Agree | Agree | I’m not sure | Don’t think so | Rubbish
---|---|---|---|---

Most blog posts written by educational technologists tend to highlight the promise of technology to solve a particular issue (e.g. assessment, feedback, engagement) rather than highlight and develop expertise amongst teachers to effect change.

---

**Scenario – The worried Vice-Chancellor (VC)**

You get a phone call from your VC, Prof Smith.

Prof Smith: Hi there. It’s Prof Smith

You: Oh, hello. How are you.

Prof Smith: Fine thanks. No time for small chat.

You: Okay. How can I help.

Prof Smith: Your efforts with education technologies in your class have been mentioned to me by your HOD. They are impressed and I’ve heard very good reports from students.”

You: (Blushing) Thanks, nothing special really

Prof Smith: I’m a bit under pressure but an I need advice. You know that report about digital futures and education. I am concerned about chapter 5. This is a recent national report commissioned by the Higher Education Board. The report has recommended that digital technologies are effective when they are embedded into courses learning outcomes. Although no names were mentioned, I think that our institution’s progress in this area is being singled out. The attention in chapter 5 is not flattering. We all know that you are the exception. Technology adoption rates are generally poor right through the university.

You: Oh dear. That’s not good.

Prof Smith: Frankly, I am worried. I know you know what our mission of our university is - “To be the place to go when you want to know”. We are part of the information society. We must be able to use technology in our classrooms, courses and programmes. I know we’ve run training, invited software experts and sent staff to expensive conferences. I do not us to be seen to be lagging behind that “college down the road. But they have got far further than us with their digital transformation. They seem to know what potential digital offers them. We have not. How do we do the same thing?”

You: Phew. That’s a big question. Can I think about it? The potential implications
of digital are far bigger than you imagine.

Prof Smith: Yes, please do. I’d like you to do some thinking together on a with a technology enhanced learning, a sub-committee. I’d like you to chair it, but I need the following to be included. A few academics, a representative of the university elearning unit, a student class representative and a departmental support staff member. I’ve got some names and also sent them each a little note asking them if they would agree.

You: Alright. What is the mandate for the sub committee?

Prof Smith: Good question. I’ve got a scope statement template. Could you please work together with the members. I need to know what’s opportunities and threats exist outside our institution and for you to identify what strengths and weaknesses and exist here. Please fill out the template and then report back to me.

You: Certainly. I’d be very pleased to work together to elaborate on our digital vision. I also think that we need to find out more about staff and student capability within the department.

Prof Smith: Sounds good. I’ll send you off a scope statement template. After meeting with

You: Good bye

It appears that your VC is concerned about a chapter in a recent national report commissioned by a Higher Education Board. The report recommended that the effective use of digital technologies in education occur when technologies are built into the curriculum design process. Although no names were mentioned, she thinks that your institution’s progress in this area was singled out. The attention wasn’t flattering.

You know that she is committed to being a thought leader and want to use technology to improve their ratings. She is always quite clear what she wants. You also know why she has phoned you. You are the only one doing something innovative. You decide that you’d better do something after her phone call.

You decide that you’d better do something and offer to chair a subcommittee. You offer to investigate digital capability within the university and clearly articulate the strengths, weaknesses, opportunities and threats associated with technology in the department. She asks you to work with together with

- An academic colleague,
- A representative of the university elearning unit
- A student class representative
- A departmental support staff member

**Activity 2.2: Scenario Questions**

<table>
<thead>
<tr>
<th>Teacher/Facilitator Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMS: After reading the scenario, go to the comments section of the page and answer the five questions (see below).</td>
</tr>
<tr>
<td>Smartphone: Open to Google spreadsheet/download the spreadsheet. You will</td>
</tr>
</tbody>
</table>
see that a spreadsheet with two columns and five rows has been set up. Answer the questions listed in column one.

**If f2f:** Use the Activity 2.1 Table to answer the questions and then answer them for yourself.

**Complete the readings, Watch / Listen / to the telephone call and answer the following questions**

- How clear do you think Prof Smith is about the challenge facing her?
- What are the benefits of stepping up to this challenge?
- How would Silicon valley address this challenge?
- If Postman or Selwyn were on the phone line, talking to Prof Smith about her digital vision, what questions would Postman or Selwyn highlight?
- What advice would you give to your VC to prepare the organisation for the envisaged change?

There are no right or wrong answers here. Simply different shades

- Do you know what challenge is facing your institution?
- Why do you think that you and your institution should address this challenge?
- Have you explored factors that may hinder change?
- What role would critical stakeholders take within this envisaged change?

**Conversation points**

To be a digital leader and introduce change, it is necessary to become familiar with what has happened, what is happening and what might happen when people in organisations come together. Horizon scanning offers a useful approach for people to together explore an organizations readiness for emerging innovations. While you may not be able to predict what innovations will affect your institution in the future, leaders can take steps to understand the context for change. Reading literature from communities of experts, gather opinions about possible weaknesses, opportunities and threats associated with digital innovations can help familiarise you with a new context.

Change in education is not new. Many educationalists may be feeling overwhelmed as they enter uncertain educational future. The become more familiar with what has happened, what is happening and what might happen when tech and ed come together, start looking around at the history of ed technology. Change within Institutions is not straight forward. Some individual academics are using emerging technologies with their classes. Others are more reluctant to commit to change. They are concerned that digital infrastructure is being used a vehicle to colonize and rebuild academic culture. Stuck in the middle of a murky present, management is simply keeping up with the daily pressures, let alone thinking about which way to turn tomorrow.

Predicting futures is notoriously difficult, but this does not mean that we should abdicate our responsibility for shaping the future. Leaders will have to make important decisions about the range
of challenges their organization and whether the risks associated with technological change are worth taking. They can however take comfort from two centuries of education technology “Predicting is very difficult” as Niels Bohr once said, “Especially about the future”.

Another reason for comfort is that other institutions are on digital journey heading (hopefully) towards digital maturity. Some might be taking small steps towards adoption and are learning (often by trial and error) as the changes brought in by digital are introduced. Others might have had experiences of the high’s and lows of organizational restructuring. Digital has introduced a range of new options these new routes for graduates. Some are starting to see some of the unintended consequences of their digital decisions. Those that are quite committed to this path are looking for new ways to direct and advise their staff so that their curriculum becomes an aligned part of the digital enterprise.

Those that seek to lead digital transformations will find themselves “at the center of massive change, making this role both a challenging one and one that will continue to evolve in the coming years”. They recognize the need to become more digital. But many are not too sure to go about enabling this. To be the catalyst and facilitate conversations about combination of education with technology can be a little scary. You don’t know how things might blow up in your face. Futurists or futurologists have elaborated on their visions (to name a few) for filmstrips, teaching machines, computers, neuroscience mobile phones. Nay sayers believe nothing will change as technology reinforces existing power relationships.

Do you have an informed, assertive voice and position in terms of the positions and perspectives summarized above? Do you feel you can take informed decisions, and initiate change at the intersection of education and technology?

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**Activity 2.3: Curating tracking list**

**Teacher/facilitator Guide**

**LMS**  Students will access the community of experts sites that are listed and follow the links to the different horizon scanning resources. They would download the supplied spreadsheet and make their contribution toward a class wide curated innovations list.

**Smartphone**  Student will note down the list of links taken from one of the “Community of Experts” sites. If possible, they will then use the supplied spreadsheet on their phone or create a paper table that has the same column headings, access the sites listed and start to curate the innovations.

**If f2f**  In groups, open hard copies of the “Community of Experts” site, note down the links and then jointly curate a rough innovations list. Then work together on shared board or large piece of paper to create a classwide list.

You may regularly go online to stay up to date with the latest trends in education and technology. Whether it’s videos, podcasts, blogs, tweets, Facebook pages etc, you will find futurists, educators, researchers, learning designers, education support specialists organizations who are sharing about their practice, reporting about other projects, disseminating reports, evaluating or critiquing various aspects of work associated with digital and education. There is no shortage of information about innovations, in fact there is a deluge of data and it would be impossible for someone to consume it all about. Curation is a way to deal with this information overload. We would like you to collect a list of resources.

Under the heading entitled “Community of Experts”, you will see reports that have
been produced by Educause, the New Media Consortium and Open University. Choose ONE of the communities. Look in the various years and choose ONE of the highlighted technologies. Then start collecting online articles, images, videos etc that explore this particular technology in an educational setting. With each item in the collection, the curator (you) must:

- Identify a site or resource to create the tracking list
- Name the innovation
- Describe what is the innovation and why does it adds value to education
- Name and list relevant the RSS feeds of blogs, education sites, twitter followers facebook friends that you could use to consult on an ongoing basis about this innovation
- Provide written commentary how this feed would add to and develop an understanding of this innovation. If necessary please remember to cite sources
- If you can, find online examples in the educational world, where this innovation is being used, include the URL and describe.
- If you can, find an image that either pictures the innovation, or can be used as a metaphor.

Community of Experts

Higher Education Horizon Report by the New Media Consortium

Innovating Pedagogy by the Open University

Higher education’s top 10 strategic technologies, by Educause
2016 - https://library.educause.edu/resources/2016/1/higher-educations-top-10-strategic-technologies-for-2016

Checklist criteria

The curated tracking list that I have created has the following:

- An app, software service package has been selected?
- Innovation Is accurately named?
- Detailed explanation about the innovation is included?
Activity 2.4: SWOT analysis

Teacher/Facilitator Guide:

**LMS:** Use the forums on the LMS to post your strengths and weaknesses and then to comment on other participants posts

**Smartphone** Use a commonly shared app to run a “chat” party. A planned series of questions is released every 5 minutes and participants have the opportunity to respond

**F2f** The facilitator will need to decide

The task here is to succinctly articulate the opportunity and challenges associated with using digital technology from the different perspectives.

- Prepare an individual SWOT analysis based on the scenario
- Submit your SWOT analysis onto the forum
- Use the forums to make constructive comments on at least two other participants SWOT analysis. Use the criteria below

<table>
<thead>
<tr>
<th>Strengths</th>
<th>The student has comprehensively listed and explained the strengths in the institution</th>
<th>The student has listed some strength in the institutions, but their rationale is not comprehensive</th>
<th>The compilation of strengths shows a lack of effort. No explanation given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaknesses</td>
<td>The student has comprehensively listed and explained areas where members of the institution might struggle</td>
<td>The student has listed some of the areas where the instruction is not matching up but has also made some serious omissions</td>
<td>Lack of effort at the compilation of weaknesses.</td>
</tr>
</tbody>
</table>

- Follow up and respond to comments made. Use this as an opportunity for discussion. Flesh out your SWOT activity
- Peer review at least two other participants’ SWOT analysis, using the provided rubric (see below).
<table>
<thead>
<tr>
<th>Initial posting</th>
<th>Initial SWOT posts well were developed and they fully addressed and develops all aspects of the task</th>
<th>Initial SWOT Posts were adequate but not all aspects of the task addressed.</th>
<th>Initial SWOT posts had superficial thought and preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow up posting</td>
<td>Follow up post demonstrates an engagement with other posts.</td>
<td>Follow up post does not make full use of other contributions and the discussion is not enriched</td>
<td>The follow up posts are shallow and make no attempt to incorporate other’s contributions to the discussion</td>
</tr>
<tr>
<td>Content contribution</td>
<td>Posts are factually correct, reflective and substantive. The final SWOT exercise is richer</td>
<td>Posts information that is correct, but either repeats what has been posted earlier or lacks full development of the concept</td>
<td>Posts information that is off topic, incorrect or irrelevant to the discussion</td>
</tr>
<tr>
<td>References and support</td>
<td>Incorporates references to the manual and personal experiences to support comments</td>
<td>Uses personal experiences as support, but references to the manual are either not used or infrequently used</td>
<td>Includes no references to literature, readings or personal experiences</td>
</tr>
</tbody>
</table>

**Decision-making frameworks**

There is a growing range of technologies available. These technologies are also changing rapidly. And there is also a strong case for change for using these technologies for education. Making good choices about the available technologies does not occur in a vacuum. There many different stakeholders, driven by financial, political, social or educational agendas, that may influence the decisions made. Michael Trucano introduces a few of these stakeholders and their particular case for change (https://blogs.worldbank.org/edutech/why):

- **vendors**: "it's a new world, we have new technological answers to help solve many of your old problems"

- **business community**: "you run your schools like it’s still the 19th century, we need workers who know how to use the tools of the 21st century"
• parents: "by buying lots of new technologies, you can demonstrate to us -- quickly -- that you care about our children"

• academics: "if you want to transform what you are doing today, you need to adopt the new technology-enabled methods and approaches that we, the real experts, are championing"

• international competition: "look at the countries with real vision around the world -- if Uruguay and Rwanda and Singapore are doing it, why aren't you?"

With such pressures, it can be difficult to make pragmatic decision about a technology. Educators could take the technological deterministic route and choose tools that will shape their teaching practices. Or they could move in the opposite direction and reject making use of any technology in the class.

We have suggested, in unit one, that a well argued case for an innovation needs to be made. Unit 2 showed that environmental scanning could be used to judge the suitability of a particular innovation. Unit 3 started by asking us to unpack assumptions behind the choice. And in this section, we are going to look around to others and their experience and expertise for guidance when making their choices.

External pressures from vendors, business, parents are not bad, just that they are there. If you can manage these pressures and use them to make appropriate change related decisions for your institution, then it’s probably a sign that you are a good leader.

This should be a good time to seize the opportunities that digital offers education. Before focusing on equipping the institution with technology, we need to establish a set of criteria for choosing a particular technology. In this section you are introduced to a framework for making decisions about how to select technologies for teaching. This is known as the SECTIONS framework. It was put together by Tony Bates, a Canadian educator, and intended to guide decisions about the range of choices involved technology and teaching. The framework is also neatly expressed as an acronym. It is intended to guides organizational leaders with a set of methodical questioning and the documentation of the answers to complete a strategic plan in the implementation and support for e-learning.

Tony Bates has created a ‘SECTIONS’ decision-making framework, that is, he considers the following as criteria of consideration:

S - Students: What is known about the students?

E - Ease of use and reliability: How easy is it for teachers and instructors to use?

C – Costs: What is the cost structure of each technology?

T – Teaching and learning: What kinds of learning are needed?

I – Interactivity: What kind of interaction does this technology enable?

O – Organizational issues: What are the organizational requirements and barriers to be removed?

N – Networks: how important is it to enable learners to network beyond a course, with others such as subject specialists, professionals in the field, and relevant people in the community? Can the course, or student learning, benefit from such external connections?

S - Security and privacy: What are the security and privacy needs of my context, my students? Which technologies will best allow me to do this?

The last factor is to make the decision: Deciding!

This framework offers a useful “compass” to guide and frame considerations from a range of different perspectives. Instead of making decisions driven a narrow set of criteria, the framework uses the SECTIONS acronym to assist with digital decision making. If people within this patchwork are called on
to contribute their perspective, then jointly an institution can make better judgements about technology.

Participants will apply Bates’ SECTIONS framework to create a set of common criteria. The framework will be used to facilitate conversations around digital decisions. These criteria will help them achieve clarity about their digital decisions.

Feel free to explore the intricate details of how this can be implemented in Bates’s open book in the link below.

Acknowledgement: Tony Bates (May 2017), Open Book:

https://open.bccampus.ca/find-open-textbooks/?uuid=da50f5f1-bbc6-481e-a359-e73007c66932&contributor=&keyword=&subject=

https://opentextbc.ca/teachinginadigitalage/chapter/9-1-models-for-media-selection/

https://www.tonybates.ca/2015/01/03/choosing-a-model-for-media-selection/

Assessment

1. Consider the two technological revolutions in education: The print publishing turn, and now the digital turn. How would you describe the relation between the two?

A) Print media in education are inherently better for cognitive practices
B) Digital media in education will come to function just like print and publishing, in the long term
C) There are no real differences; both are merely innovations in educational technology
D) There are some major differences; at the cognitive, social, and environmental levels

2. Silicon Valley continues to introduce new technologies, which are increasingly used for educational purposes. This is driven by an intensive investment in

A) Research and development by the companies there
B) The interest to maximize financial profit
C) Improving the quality of lives and livelihoods of developing contexts
D) All the above

3. What could aid you in preparing to implement a change vision through the zone of uncertainty to actualize your vision?

A) Conducting an environmental scan
B) Conducting a survey to gauge stakeholders attitudes towards technology change
C) Conducting a SWOT analysis
D) All of the above

4. What could aid you in moving from your change vision through the zone of uncertainty to actualize your vision?

A) Conducting an environmental scan
B) Conducting a survey to gauge stakeholders attitudes towards technology change
change
C) Conducting a SWOT analysis
D) None of the above
5. A strategic planning process that deliberately focuses on acquiring information from internal and external environments
A) Active scanning
B) Passive scanning
C) SWOT analysis
D) Evaluation
6. Reflecting on the incidental connections between information read from websites, newspapers articles, and interactions with other academics, students and industry members can be described as
A) Active scanning
B) Passive scanning
C) SWOT analysis
D) Evaluation
7. A structured planning exercise that could illuminate possible challenges in implementing change visions:
A) Active scanning
B) Passive scanning
C) SWOT analysis
D) Planning review
8. When conducting a SWOT analysis, the internal risks are termed:
A) Strengths and Weaknesses
B) Weaknesses and opportunities
C) Opportunities and threat
D) Threats and strength
9. When conducting a SWOT analysis, the external risks are termed:
A) Strengths and Weaknesses
B) Weaknesses and opportunities
C) Opportunities and threat
D) Threats and strength
10. Sorting through the vast amounts of content on the web and presenting it in a meaningful and organized way around a specific theme, can best be described as:
A) Digital curation
B) Environmental scanning
C) Thematic field analysis
D) Organising content
11. To implement technological change in institutions, who would be best to lead the process?
A) A technology expert
B) Senior Management
C) A change management team
D) A student revolution
Check Your Responses:
Unit 3: Unpacking the assumptions

Introduction

In the world where, education, change and technology meet, jargon is rife. Rarely assuming that we share a common language when talking about education and technology is a mistake. There is no consensus about the meaning of e-learning, blended learning and online learning. When terms like “digital residents and visitors” or ‘digital literacies’ or ‘affordances of digital tools” are thrown into everyday conversation, we rarely unpack what the speaker means, for a range of reasons.

Upon completion of this unit you will be able to:

- Unpack and understand underlying assumption
- Understand that different lenses affect how we see technology
- Stop being intimidated by jargon and buzzwords associated with digital and education.
- Choose Clarity over Fear, Uncertainty and Doubt (FUD). Avoid FUD stopping you from asking more questions. Take steps to embrace clarity.

Survey

Ed tech start-ups have discovered disruption. Instead of seeing digitisation as a means to improvement they argue that digitisation leads to disruptions and this will have a transforming effect on education. Use this light hearted quiz to determine to what extent you are a disruptor.

You sprout a steady stream of buzzwords and Three Letter Acronyms but when asked, you can’t clearly explain what they mean.
I’m full of T.L.A. .................................................Buzzwords are not my style

You almost always assume that the route to addressing a class problem (formative assessment, motivation, student attrition) will be solved by some technology.
Yes. So what!..............................................Some times we need to go back to the basics

When you are faced with expertise within particular field (for example a teacher with 20 years of classroom experience), you either ignore or undermine the advice.
But they ARE ignorant luddites..............................................What do you, you and you think

You keep on being surprised why nobody else seems to see your “big-data solution”?
It’s a no brainer.........................................................Algorithms have bias built into them

You are binary in your thinking and uncomfortable with ambiguity.
There are only two people in the world. Those who are binary thinkers and those who are not.
.................................................................I’m afraid that I can’t give you a definitive answer.

You tend to dismiss counter arguments without any given reason
Wrong. Next.......................................................Let me think about what you’ve said

Your Tweet / Facebook stream has few engagements with educators and you regularly includes the hashtag “#disruption”
Jump. You’re on a burning platform ..............................Chalk and talk
You never can show anyone impressive results
Evaluations are meaningless...........................................here's my baseline data

You think that the job must fit the tools
Uberisation of education ............................................Evolutionary change

Your response to “Education is sitting at a unique moment in history” is
Let me tell you about new learning paradigms............Let’s put this in perspective

Making decisions together

Good decisions about where technology and education go together in the future are often best made together. We assume that you are not a solo innovator but are working together with other people that want to also make some form of a digital transition. It is hoped, that as you work through this module, that you will become aware of the challenges and be equipped to undertake various important decisions along the journey. Ideally we would hope that you are learning together with a group of like minded leaders But if you are flying alone, don’t worry. You will have to use your digital identity, connect to your network and reframe some of activities or deliberately unpack the implications of the learning for your situation. Whether alone or together with a team, you will start to look at making better decisions.

Positive conversations within this patchwork about the intersection between education and technology often generate a lot of heat. Digital talent, whether it be amongst academics, policymakers administrators etc is in short supply and their different perspectives on digital transformation can be a major challenge. Complaints about teaching load, student assignments and unreasonable deadlines are common. Everyone seems overworked and there’s not enough hours to balance committee responsibilities with research, teaching, community service etc. The staff room is also is filled with regular rants about data projectors, smart boards, printers, networks, computer labs etc. Technology failures have almost become a rite of passage for the inexperienced and enthusiastic young lecturer.

Stakeholders look at digital from their own vantage point. They have their own perspective on digital adoption. Mindell and Kelly use the lens metaphor to describe the way that a stakeholder views a decision. They identify three major lenses within the patchwork

- **The teaching and learning lens** - primarily academics. From their vantage point, they are concerned with teaching, students, interactivity etc. They would like to know about how digital improves teaching and learning. Their educational lens leads them to be concerned about the following. When taking a digital route, they want to know how learning activities are created; how interaction and engagement is facilitated; how learning resources are provided; how assessment is conducted etc. when using digital technologies

- **The technology management lens** - primarily technology support staff. From their vantage point, they are concerned with ease of use, training, security etc. Their support lens leads them to ask questions about training, technical support for students and staff, accessibility, student administration, functionality, stability, scalability, security, the broader community.

- **The university administration lens** (administrative decision-makers). They are concerned with cost, organizational issues, compliance, risk, privacy etc. Their executive lens leads them to have questions about strategic concerns, policy development, impact of technology on throughput and other high-level considerations.

It is unusual to find an institution that has a shared model of a digital change amongst all
stakeholders. This is because different stakeholder imperative drives their agenda. For example if the technology management lens dominates, then large investments in infrastructure may be made, or new technologies may be installed. Other times, senior management hope to improve the status of the institution, or enhance efficiency and want to use technology as a productivity measure. These different lenses lead to different types of conversations about digital technology.

**Buzzword, Jargon and paradigms**

Unpacking terms and acronyms is relatively simple. Unpacking the assumptions about change, education and digital is more difficult. Although in this module, we’ve attempted to avoid insider language, you cannot sidestep some of vocabulary. To assist with unpacking terms and acronyms, we’ve established a glossary.

Grand promises have been made about the potential impact of technology on education. These include

- a revolution in teaching and learning pedagogies as a result of the combination of education technologies with newly accepted theories of learning.
- the ability to deliver education anytime, anyplace using any means.
- the market funding the costs of elearning because of its popularity.

In some particular cases, these changes start to make waves. Reactions to these changes vary. Some respond with fear, perhaps about cutting costs, organisational restructuring or perhaps even job losses. Others are uncertain about the unknown. They don’t have enough information about what is going to happen. They might even want to be involved, but planning and execution is not transparent. Doubt is the third reaction to possible change. Doubt could be centred around in house competence. Do we have the skills and expertise.

Fear, uncertainty and doubt (often shortened to FUD) is normal response to technology. When left unchecked, FUD can disseminate negative or dubious information and appeal to the new users fear. Many who initiate change don’t expect such a reaction. They assume that everyone else understands the case for change. But in other cases FUD is spread deliberatley, by established software companies, start-ups, politicians etc.

All around us we hear about institutions that are using technology to improve learning and teaching. We see impressive infographics, videos and articles about the digital world and how it has and will disrupt established businesses and organizations. Colleagues from other institutions talk knowledgably about a bewildering range of acronyms. We are either impressed and buy into the jargon. Or resist, because we think that technology is overhyped, Silicon valley is only interested in profit. Information overload is a reality, especially in the digital world.

Postman suggested that all media tends to become mythic. The alphabet, books, newspapers magazines, comics etc. are not gift of nature, but artifacts produced in a specific political and historical context. While many have thought that this transition to a digital world will usher in a new more just era, the reality is that not everybody benefits equally from the introduction of digital. We have already seen the effects of this new modality on aspects of education. Change will introduce issues of power, control, conflict and resistance and these issues need to be incorporated into our stories about our digital realities and futures.

When digital technology becomes mythic, they then it becomes accepted as is. Digital Futures should not distract from messy present realities State of the art technology has to be combined with “state of the actual”. Preparing ourselves, our students and our institution requires that we take the time to make detailed and contextually rich analysis, engage in objective evaluation and investigate any situation in terms of its positives, negatives and all areas in between. Such discussions may surface broader questions about what education is and what it should be.
Summary

It's very easy to spout jargon in conversations. It’s harder to unpack the philosophical positions behind those arguments, but it is not so difficult a task that you cannot work through it towards clarity.

In this unit you learned that while we may use common terms, the underlying assumptions behind our language needs to be unpacked. Don’t be intimidated by the jargon and buzzwords associated with digital and education. Sometimes it is more important to unpack the thinking behind the jargon than understand what a particular word or term means.

Fear, uncertainty and doubt (FUD) is common. Don’t let FUD stop you from asking more questions. Take steps to embrace clarity, and therefore, make informed decisions.

Activity 3.1: Changing educational practices

Teacher/Facilitator Guide:

LMS: Use the forums on the LMS to post you’re your position to the statement

Smartphone: Use your smartphone to record your response to the statement

F2f: The facilitator will need to decide

Watch the video entitled Technological Determinism vs. Social Constructivism, and or read the excerpts from the transcribed video below: https://youtu.be/4i9vIj5rxk (Video to be embedded; CC BY)

Excerpts from the Full Transcript:

There are two basic approaches you can adopt when you think about the role of technology in society. One is known as technological determinism and the other one is known as the social construction of technology. So Technological determinism means that the technology determines the outcome. Hence the name, technological determinism. So, for example, when someone says, "The internet implies freedom and democracy". So the internet is inherently good, that means that the internet determines the outcome, it’s good, it implies freedom and democracy. What is also technological determinism is if someone says, "The internet implies an informational dictatorship, total control, complete surveillance. The internet is inherently bad. That also means the technology determines the outcome…

[Section about George Orwell book “1984” and the dystopia of an informational dictatorship.]

By now, some people say with many secret services almost all services employing thousands of mathematicians and computer scientist to do surveillance work, some people say well, Maybe the internet is inherently be bad. What we need to be aware of that this is aso technological determinism…

Now as you can see here, how can the internet at the same time be good and bad? How can at the same time imply democracy and an informational dictatorship. Well, the truth is more that technology is inherently neither good nor bad. That’s why a social constructionist will argue that technology has different outcomes. These outcomes have to be socially constructed. They have to be chosen in proactive way…
Technology is just a tool. Think about a hammer. Hammer is also just a tool. Now a hammer can be extremely useful. You couldn’t build a house, or you couldn’t even hang a picture without something that is something equivalent of a hammer. But everything that is functionally equivalent to a hammer can be used to hurt or kill other people. Is this the fault of the hammer? No, the hammer is not inherently good or bad. The hammer is just a tool...

And there are many discussions like this going on with regard to technology. For example, some people say guns don’t kill people, people kill people. It’s a social choice the choice of an individual to use guns for this or for example another purpose or for hunting.

The atomic bomb is another example. Some people might say, the goal of producing so many bombs that we have on earth is to destroy the earth. Therefore technological deterministically inevitably atomic bombs inevitably will destroy the earth.

Well for the last 60-70 years we did a good job of preventing this technological determinism. Seems to be a role for social choice and social construction.

But these last two examples, guns and bombs also show you that while technology are not inherently good or bad. Technology is not neutral

Guns are made for shooting things. Bombs are made for bombing.

[Parts about philosophical statements]

The result of this story. We shape our tools, then our tools also shape us. It is very important that we start to understand this difference. Statements. Newspapers, business strategies are full of tech determinist statement. I often catch myself catch myself using tech deterministic statement. Digitisation implies efficiency. Now you cannot qualify every statement. You need to recognise that technology and digitisation does not necessarily imply efficiency. Digitisation can also make you extremely inefficient. Remember not take these statements at face value. Recognise them for what they are. We have a social responsibility to shape the digital revolution. It is a process of social construction. Digitisation by itself does not have a pre-determined outcome. The responsibility is on us, our generation to ensure that digitalisation is used for the benefit of society...”

Now let’s respond to the statement “Technology has altered educators teaching practices”.

A common theme in ed tech literature is that new technologies can solve schooling and higher education problems. Particular technologies are promoted as solutions to serious educational issues. This techno-determinism is becoming quite common.

Below are four perennial issues in schooling. Can you suggest emerging “technologies” that are being touted as solutions to these problems. Then think about how FUD is being used to promote these solutions. Can you explain how fear, uncertainty and doubt is promoting solutionism, without really dealing with the problem

1. Traditional whole class teaching
2. Disengaged and underachieving students
3. Disconnect between the world of education and the world of work
4. Rising Costs of education

5. Marketisation and digitalisation of education

Glossary

Every discipline has its own specialised terminology. Digital education leadership is full of acronyms and unfamiliar words. As you progress through this course, you will have to understand the terms and recognise the meanings of the acronyms which are used when talking about this subject. As a joint activity, participants are going to develop an “online glossary” which will act as a collective and shared list of important terms and acronyms.

What we want you to do is to view and contribute towards a glossary. Here you will see an alphabetical list of commonly used terms. Browse through the collected terms. You can then create entries in this online glossary that either

Define these terms and the source for this definition

Add their own terms, definitions and sources

Comment on entries added by others

Once you have familiarised yourself with the glossary and are ready to provide entries, follow the step-by-step instructions which will explain how to expand on existing entries and adding your own.

The glossary should be an ongoing task, and you will be reminded to return to the online glossary at the end of each section, to see how it’s building up.

Glossary guide

<table>
<thead>
<tr>
<th>Glossary rubric</th>
<th>Above standard</th>
<th>Standard</th>
<th>Below Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of definitions</td>
<td>3 or more unlisted words about digital education leadership are defined</td>
<td>3 or more words of the listed words about digital education leadership are defined</td>
<td>2 or less listed digital education leadership words defined</td>
</tr>
<tr>
<td>Accuracy of the terms</td>
<td>No inaccuracies in the definitions</td>
<td>Definitions of words have a few inaccuracies</td>
<td>Definitions of words contain many inaccuracies</td>
</tr>
<tr>
<td>Information sources</td>
<td>Source of information is always clearly</td>
<td>Sources of information is not always</td>
<td>No sources of information</td>
</tr>
</tbody>
</table>
You can consult the course on ‘Leading Education Systems’ for further enrichment, resources and training – for yourself, your teams, your institutions, and your own OER material development. It forms part of a Masters of Education in Educational Leadership produced by The members of the Commonwealth of Learning’s Virtual University of the Small States of the Commonwealth.

The course prepares educational leaders to better manage the systems, resources, curriculum, facilities and personnel under their charge. Educational leaders are action-oriented individuals who anticipate the short- and long-term consequences of their strategies. They consider strategies as they relate to their own organization, the ministry and the government as a whole. The course provides leaders with the decision-making skills they require to create strategies that support the business of education. It helps them implement policies for the education system that embrace the rule of law and guide the ethical practices in the administration of their duties.


### Assessment

1. Fear, Doubt and Uncertainty are
   A) Typical responses to technology
   B) Typical drivers for increasing the profit of tech-companies
   C) Typical responses for any social change
   D) A and B

2. With new keywords and buzzwords that are emerging with new digital developments, a digital education leader is best positioned if they are
   A) constantly also creating new keywords of their own
   B) exploring the meanings behind keywords and buzzwords
   C) translating the new words into older concepts
   D) All the above.

3. If someone says "The internet implies freedom and democracy", this could be described as a
A) Techno-determinist position  
B) Digital wonder position  
C) Social constructivist position  
D) Digital deficient position

4. If someone says "The internet implies an informational dictatorship, total control, complete surveillance. The internet is inherently bad." this could be described as a

A) Techno-determinist position  
B) Digital wonder position  
C) Social constructivist position  
D) Anti-technology stand

5. If someone says that “Guns don’t kill people, people kill people.” This could be described as a

A) Techno-denialist position  
B) Social constructivist position  
C) Technology-neutral position.  
D) Digital deficient position

6. Technologies – like bombs, guns and digital platforms - are actually completely neutral. It is the choice of an individual that determines their impact. This is a

A) Techno-determinist position  
B) Social constructivist position  
C) True interpretation of technology’s role in society. Technology can’t be held accountable for how it is used.  
D) False interpretation of technology’s neutrality. Technology cannot be neutral since it is invented with some intention.

7. Which of the following will be reduced by the inclusion of technology in the educational practices:

A) Disconnects between the world of education and the world of work  
B) Rising costs of education  
C) Marketisation of education  
D) None of the above

8. A digital education leader is typically:

A) A student  
B) A teacher  
C) A policy-maker  
D) All of the above

Check Your Progress:
